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Tripping the Laser Fantastic: A Look Back at LaserFest 2010



Tom Baer

As our global celebration of the birth of the laser ends, OSA Past President Tom Baer reflects on the year's events and festivities—and the 50 years of laser history that preceded them.

In less than 50 milliseconds, 50 years ago, a simple but elegant device made from off-the-shelf components changed the world. A button was pushed, discharging a capacitor; then a flash lamp fired and chromium atoms absorbed visible light; finally, ruby red photons bounced off silver end mirrors, and a single red spot flashed for an instant on the wall, revealing hitherto unexplored properties of light.

Theory to experiment to feasibility: proof of the first man-made laser. But in 1960, the first question on peoples' minds was: What was it good for? This novel phenomenon, born out of fundamental curiosity in a cauldron of competition and creativity, appeared to solve no pressing world problems. However, even without a clear *raison d'être*, the first demonstration by Theodore Maiman, C.K. Asawa and I.J. D'Haenens at Hughes Research Laboratories presented exhilarating challenges and tremendous possibilities to those

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took part in a yearlong celebration called LaserFest, which commemorated this amazing journey of discovery.

The idea for LaserFest was sparked at OSA by a desire to recognize the accomplishments of distinguished laser

pioneers. It quickly gained support from the American Physical Society (APS), SPIE and the IEEE Photonics Society. United as co-founders, these scientific societies, in an unprecedented coalition, set the tone for an enthusiastic year-long celebration. Partners and sponsors throughout the world ranged from corporations, universities, research institutes, government agencies, foundations and private individuals. All joined together to host and sponsor LaserFest events located on many continents and in dozens of countries.

All around the world, appreciative audiences gathered to honor preeminent experimentalists, theoreticians, engineers and scientists who participated in the early days of the new field of laser science. At LaserFest events and through the pages of this magazine, laser luminaries shared their recollections of those years when they spent uncounted hours working in the dark, in old abandoned



mines or deep in basement labs or rooms with foil-covered windows, aligning mirror mounts, calculating, tweaking coatings and angles, monitoring temperatures, inventing heating and cooling methods, crunching data on primitive computers, testing dyes and plumbing connections, and creating new approaches to electronic feedback/stabilization control circuits.

During this past year, laser pioneers, competitors and collaborators alike recalled and credited co-workers: students, technicians, staff who machined parts, ground and polished optics and created circuit boards, suppliers who grew crystals and provided parts. At LaserFest events, we heard stories about seminal papers accepted and rejected, successes and failures in the pursuit of knowledge and new applications building on the unique properties of lasers. During conversations with these legends in optical science, many anecdotes were recounted and recorded, enriching our history of an exciting period of invention and innovation. It was an honor to hear and share their stories, which were enjoyed by thousands of our colleagues.

LaserFest emphasized education as well, offering information to the public and principals of funding agencies about the remarkable range of laser applications. The general public learned about lasers and LaserFest through nearly 400 stories on radio, in newspapers and

Congratulations and thank you to all in the optics community who helped make this celebration a success, including numerous sponsors and 76 global partners.

magazines, via podcasts and online, with an audience estimated to be at least 350 million. In the United States, congressional briefings and resolutions grew out of LaserFest efforts to highlight the impact of the government funding for basic laser science that resulted in a vast range of commercial products and services. In May, President Obama issued a letter citing the enormous economic contribution of laser technologies, adding his congratulations on the achievements of the first 50 years.

LaserFest organizers focused on inspiring students in many ways—from a gala kick-off in snowbound Washington, D.C., to OSA/SPIE student chapter meetings in Moscow, Recife, Galway, Tel Aviv, and beyond. Whether it was through the APS LaserFest video contest, the LasersRock! concert sponsored by Newport Corporation in

San Jose, or the 38 outstanding outreach teams using grants to produce laser education and celebration projects, future researchers found opportunities to learn about coherent light. They met famous names face-to-face, read about ongoing developments in laser science and technology, and used leadership skills to organize international meetings for fellow students. LaserFest venues offered new networking opportunities to students far from major laser research centers and encouragement for young people to pursue careers in optical science and engineering.

What an incredible year it's been! Congratulations and thank you to all of you in the optics community who have helped to achieve a fun, successful and extraordinary celebration. This includes Lockheed Martin, the Richard Lounsbery Foundation, Coherent, Herbert V. Friedman, Inc., Infinera, Newport, AT&T, Boeing, CVI Melles Griot and Mani Bhaumik; the U.S. Department of Energy, National Science Foundation, Air Force Office of Science Research; Europa Science, Laser Focus World, OPN, SPIE Professional; and 76 global partners. To learn more, visit www.LaserFest.org Here's to the next 50 years—Lasers 2060! ▲

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